APS

Palo Verde Nuclear
Generating Station

David Mauldin
Vice President
Nuclear Engineering
and Support

TEL (623) 393-5553
FAX (623) 393-6077

Mail Station 7605
P.O. Box 52034
Phoenix, AZ 85072-2034

10 CFR 50.90
10 CFR 50.91

102-04858-CDM/TNW/RJR
October 24, 2002

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Station P1-37
Washington, DC 20555-0001

References 1. Letter 102-04844-CDM/TNW/JAP, "Exigent Amendment Request to Technical Specification 5.5.9, Steam Generator (SG) Tube Surveillance Program," dated September 26, 2002, C. D. Mauldin, APS to USNRC

2. Letter 102-04856 CDM/TNW/RJR, "Response to Request for Additional Information to Proposed Exigent Amendment to Technical Specification 5.5.9, Steam Generator Tube Surveillance Program, " dated October 23, 2002, C. D. Mauldin, APS to USNRC

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 1
Docket No. STN 50-528
Supplement to the Proposed Exigent Amendment to Technical Specification 5.5.9, Steam Generator Tube Surveillance Program

In the letters referenced above, Arizona Public Service Company (APS) requested an exigent amendment to Technical Specification (TS) 5.5.9, Steam Generator (SG) Tube Surveillance Program. The TS wording was originally submitted in Reference 1 to require the SG tubes to have an inspection extent of 7 inches from the secondary face of the tubesheet. In Reference 2, the inspection extent was changed to be 7 inches from the bottom of the expansion transition (BET). This change in the definition of inspection extent occurred near the completion of the Unit 1 refueling outage SG testing campaign.

The PVNGS inspection program for U1R10 was based on the proposed amendment request submitted in Reference 1. The inspection was based on ensuring that at least seven (7) inches of tubing within the tubesheet was inspected using a qualified technique. The seven (7) inch extent was to be measured from the secondary face of the tubesheet.

A001

A complete evaluation of the inspection program with respect to the revised amendment wording was initiated by APS in order to validate the inspection extents. This assessment was completed on October 24, 2002, subsequent to the submittal of the changed wording.

Based on this assessment of the U1R10 inspection program results, it has been determined that the Plus Point inspection extent for twelve (12) tubes in SG 12 did not satisfy a seven (7) inch extent below the BET as defined in the revised wording for the PVNGS Amendment to Technical Specification 5.5.9, Steam Generator Tube Surveillance Program, submitted to the NRC in Reference 2. The inspection extent discrepancies range from 0.03 inches to 0.21 inches. The mean value is 0.09 inches. It should be noted that PVNGS does not expect a similar occurrence in the future as program controls will ensure inspection conduct in accordance with the final amendment wording. This condition is attributed to an evolving definition that was finalized after the inspection program had been completed.

APS has evaluated the impact of this condition with respect to tube integrity and concludes that both the structural and leakage integrity of the Unit 1 steam generators is not impacted by the inspection anomaly. The basis for this conclusion is as follows:

- As indicated in Table 1 of the RAI response Introduction, APS has included a 1.5 inch margin to account for NDE uncertainties and other variabilities. Some of that margin is based on the end-of-life condition of the steam generators with respect to the number of circumferential flaws in the bobbin only inspection region. Based on a current projection of less than 100 flaws for Unit 1, Cycle 11, the additional flaws that may be present in the small amount of tubing not inspected by Plus Point is expected to be negligible with respect to the possible contribution to leakage.

- The maximum inspection difference is less than the value specified for NDE uncertainty in the RAI response.

- Based on a historical review of the twelve (12) tubes, five of the twelve had been inspected beyond the final amendment criteria (seven inch below BET) in U1R9 (Despite a program inspection extent criteria of five (5) inches in U1R9). These tubes were free from detected degradation at that time, as well as being free from detected degradation for the extent conducted in U1R10.

- All inspections provide evidence that the 5.5 inches of fully engaged tubing required to ensure leakage and structural integrity has been inspected and verified to be free of detected degradation.

Table 1

Tube Number	BOD[1]	BET[2]	TEA[3]	Discrepancy
R66C35	7.08	0.2	6.88	0.12
R6C35	7.09	0.16	6.93	0.07
R12C35	7.06	0.11	6.95	0.05
R72C35	7.1	0.13	6.97	0.03
R11C36	7.01	0.22	6.79	0.21
R47C36	7.06	0.11	6.95	0.05
R8C37	7.03	0.2	6.83	0.17
R95C42	7.15	0.19	6.96	0.04
R108C43	7.01	0.11	6.90	0.10
R7C44	7.06	0.12	6.94	0.06
R50C121	7.04	0.13	6.91	0.09
R33C124	7.04	0.16	6.88	0.12

Notes.
1. BOD – Bottom of Data – Inspection extent (inches) measured from the secondary face of the tubesheet
2. BET – Bottom of Expansion Transition (BET) – Location of BET (inches) as measured from the secondary face of the tubesheet.
3. TEA – Tube Engagement Area – the difference between the BOD and the BET (inches). The length of fully engaged tubing to be free of detected service induced degradation

Should you have any questions, please contact Thomas N. Weber at (623) 393-5764.

Sincerely,

CDM/TNW/RJR

cc: E. W. Merschoff
J. N. Donohew
M. B. Fields
N. L. Salgado
A. V. Godwin